

Notice of Allowability

Application No.

09/677,913

Examiner

Samuel Broda

Applicant(s)

DITLOW ET AL.

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2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' Amendment dated 29 June 2004.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 4.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


SAMUEL BRODA, ESQ.
PRIMARY EXAMINER

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1. This communication is in response to Applicants' Amendment in Response to Non-Final Office Action dated 29 June 2004. Claim 8 was amended; claims 1-15 are pending.

Withdrawal of Rejections Under Sections 102, 103, and 112

2. Applicants' arguments and claim amendment are sufficient to remove the rejections under Sections 102, 103, and 112.

Examiner's Amendment

3.1 An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicants, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

This Examiner's amendment updates the "Cross Reference to Related Application" appearing in the Specification and removes the reference to an attorney docket number.

3.2 The application has been amended as follows:

In the Specification at page 1, replace the paragraph under the heading "Cross Reference to Related Application" with the following paragraph:

--This application is related by common inventorship and subject matter to Application No. 09/615,149, now U. S. Patent 6,499,134 titled "Method of Assigning Integrated Circuit I/O Signals in an Integrated Circuit Package," issued 24 December 2002. The listed application is

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assigned to International Business Machines Corporation and is entirely incorporated herein by this reference.--

Reasons for Allowance

4. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a method and system for performing power distribution analysis for I/O circuits in an integrated circuit (IC) design for individual power grid windows of a circuit, with each window corner defined by a ground or voltage bump (Buffet et al, "Methodology for I/O Cell Placement and Checking in ASIC Designs Using Area-Array Power Grid");

(2) a tile-based routing between a bump pad and an input/output pad device for implementation on a flip-chip integrated circuit die (Rao et al, U.S. Patent 6,225,143); and

(3) a core network power model formed by a grid (Hayashi et al, "EMI-Noise Analysis Under ASIC Design Environment").

4.1 Applicants' first set of claims consists of claims 1-6 and 14.

Independent claim 1 is directed to a method for performing power distribution analysis for I/O circuits in an IC design; independent claim 14 is the corresponding program storage

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device claim. Each claim identifies the distinct steps of: “c) indexing each of said I/O circuit currents and said average logic current demand per node to the node in said model closest to the corresponding I/O circuit location” and “d) solving the resistance and current source model resulting from step (c) for voltages at the nodes”.

Because the closest prior art does not appear to teach or suggest an indexed set of nodes using average logic current demand per node used to solve for node voltages for the complete circuit, claims 1-6 and 14 are deemed allowable.

4.2 Applicants' second set of claims consists of claims 7-13 and 15.

Independent claim 7 is directed to a method for establishing a distribution of I/O circuits in an IC design; independent claim 13 is the corresponding computer medium product claim and independent claim 15 is the corresponding system claim. Each claim identifies the distinct steps of: “relating currents of I/O circuits connected to said network, and an average logic current demand per node, to nodes in said resistance model” and “solving for voltages at said nodes in terms of said resistivities, I/O circuit currents and average logic current demand per node”.

Because the closest prior art does not appear to teach or suggest relating an average logic current demand per node used to solve for node voltages for the complete circuit, claims 7-13 and 15 are deemed allowable.

5. Any comments considered necessary by Applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (571) 272-3709. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska can be reached at (571) 272-3716. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.



**SAMUEL BRODA, ESQ.
PRIMARY EXAMINER**